

Serial No.: 09/641,667
Page 3

120/10	33/32
121/10	34/32
122/10	35/32
123/103	37/36
124/103	38/36
125	39
126/125	40/39
127/125	41/39
128/125	42/39
129	43
130/129	44/43
131/129	45/43
132/129	46/43
133	47
134/133	48/47
135/133	49/47
136/133	50/47

REMARKS

Claims 1-17, 103, 104 and 106-136 are in the application. Entrance of this Amendment, reconsideration and reexamination are respectfully requested.

1. PTO Office Action Still Sent to the Wrong Attorney(s) at the Wrong Address

In Applicant's Amendment Under Rule 116 dated July 30, 2004 == now entered as a preliminary amendment to the present continuing Prosecution Application -- it was stated that:

A (1) new Power of Attorney designating the undersigned was entered in the present application by

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Serial No.: 09/641,667
Page 4

Applicant's Amendment of November 19, 2003, and (2) the Examiner subsequently held telephonic conversations with Applicant's undersigned (new) representative as was memorialized in Applicant's supplemental response of January 20, 2004.

The Office Action of March 23, 2004, is mis-addressed to Applicant's former attorneys. Please address further communications on this application to Applicant's undersigned representative. (If the change in power of attorney is somehow not within the file and/or is found insufficient, then please mail the former attorneys while also copying the undersigned as provided for in the MPEP).

The present Office Action mailed January 24, 2005, is still to the wrong address. (This is true even if Applicant's new appointment is somehow defective (which is not indicated; see the MPEP re: communication with an attorney purporting to assume the power.)

Applicant is, and remains, in jeopardy of not receiving Office Communications. The present Office Action was received only after some delay. Change of Applicant's attorney representative to the below-signed, at the below indicated address, is required. Please communicate any problems in so doing to the undersigned (which communication is per the MPEP).

2. Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 1-17 and 103-116 were rejected under 35 U.S.C. §112, second paragraph.

The Examiner objects to 'location' in claim 1, Amendment to claim 1 deletes this term. This term does, however, re-appear in dependent claims 106-109, and also in independent claims 116 and 125. The meaning is deemed clear from the specification. The 'location' of the target-probe complex need not be, and is not normally, co-extensive with the normally greater area/volume to

Serial No.: 09/641,667
Page 5

which a magnetic field is applied. It will be understood that Applicant is sensing the magnetic properties of the target-probe complex with, preferably, a solid state magnetic sensor and, most preferably, a giant magnetoresistive ratio effect solid state magnetic sensor. (Such a sensor is used, inter alia, as the read head of a Winchester magnetic disk (of, e.g., a computer) where the magnetic domains sensed are of micron size.) The use of the magnetic sensor to 'locate' Applicant's magnetic probe complex functions likewise, and to like accuracies.

(Although the magnetic response of the entire sample is normally of interest, it may be noted in passing that -- particularly in the raster-scan type motion described at, inter alia, specification page 18 -- Applicant may fix the boundaries of a sample with great accuracy, and may also know the alignment of target-probe complexes within the sample. Such an accurate detection of location is alien to the reference art, including Rohr.)

The Examiner likewise objects to the term 'orientation' in claim 1. As taught by Applicant's specification, the term includes both magnetic and to spatial orientation. It is well known that a magnetic sensor can, by strength and characteristics (i.e., hysteresis loop) of the sensed magnetic field, detect different possible orientations of the magnetic field of the specimen (i.e., the magnetic axis, and the direction of the magnetic field, of the specimen). However, the molecular organization of the structure giving rise to this magnetic field, axis, and to this magnetic moment, is also in general known. Thus by determining the 'orientation' of the magnetic field of the specimen, the spatial organization of the molecules of at least the magnetic probe (if not also the target-probe complex) is likewise determined.

(Again in passing it may be noted that Applicant may fix the magnetic and spatial orientation of his target-probe complexes

Serial No : 09/641,667

Page 6

with great accuracy. Such an accurate detection of orientation is again alien to the reference art, including Rohr.)

The Examiner objects to the term 'non-magnetic colloid' in claim 15. Claim 15 is amended to more closely, and correctly, mimic the language of the specification (which specification is correct as to what occurs).

Claim 113 is amended to 'ferrofluid'.

3. Rejections Under 35 U.S.C. §102 and §103

The Examiner rejects claims 1-2, 5, 8, 9, 16-17 and 112-116 under 35 U.S.C. §102 over the reference art of Rohr.

The Examiner rejects claims 3, 4, 6, 7, 11-14, and 110-111 under 35 U.S.C. §103 over the reference art of Rohr in view of the reference art of Baselt, et al,

Rohr uses "magnetic response" in determining the force, or influence, on his magnetic label. Rohr moves a particle to which a magnetic probe is bound in a magnetic field, or, more exactly, in a magnetic field having a gradient. (The magnetic field gradient causes the particle to move.) Movement of the particle is evidence of the magnetic binding, the weight of the complex, etc.

Applicant uses, most preferably, a solid state magnetic field sensor (most preferably a giant magnetoresistive effect magnetic sensor) to directly sense the magnetic field of a target-probe complex. At least the following differences are manifest:

- 1) Applicant's applied magnetic field need exhibit no gradient, as is required for the method of Rohr.
- 2) Applicant's applied magnetic field can be in the plane of a target-probe complex (sample) which is physically constrained to lie in a plane. This would not suffice for the method of Rohr, which method must apply a field

Serial No.: 09/641,667
Page 7

- having (at least a) component in a direction in which his magnetically-labeled samples may move.
- (3) The method of Rohr cannot sense any of
- (3a) the hysteresis loop of the sample, as is solvable for
 - (3a1) remnant magnetization
 - (3a2) saturation magnetization. and
 - (3a3) coercive force
 - (3b) the time response, called magnetic swing time, nor
 - (3c) the spatial (and magnetic!) orientation of the sample.
- (4) The method of Rohr may be sufficient to detect that magnetically-labeled complexes are present ('presence'), and/or the general positions thereof ('location'), but the method of Rohr cannot generally accurately detect (1) quantity, and most certainly cannot detect (2) orientation, of the target complexes.
- (5) Applicant directly senses a magnetic field (of his target-probe complex), Rohr senses only the motion of a magnetically labeled item within a magnetic field.

Claims 10, 103-109 are stated to be allowable if re-written to overcome the rejections under 35 U.S.C. §112, second paragraph. Claims 10 and 103 are so re-written, and are deemed allowable, (Claims 104-109 remain dependent upon claim 1, now amended).

Applicant has amended his independent claim 1 to specify 'measuring and characterizing a magnetic signal.. to determine a hysteresis loop'. Neither the reference prior art of Rohr, nor any other, teaches or suggests how to determine the hysteresis loop of a magnetically-labeled sample (called by Applicant a 'target-probe complex').

Applicant has amended his independent claim 10 to specify

Serial No.: 09/641,667
Page 8

'generating a signal with a giant magnetoresistive ratio magnetic sensor'. The use of such a sensor, nor, indeed, any solid state magnetic sensor, is neither taught nor suggested by Rohr or any other of the prior art of reference.

Applicant has amended his independent claim 103 to specify 'measuring and characterizing a time response, called the magnetic swing time, of the magnetic signal resulting from magnetization induced in said target-probe complex.' Such a determination of magnetic swing time is impossible in the methods of Rohr or any other of the prior art of reference

Applicant has added independent 116 to specify that he is 'subjecting a substantially planar sample of said target-probe complex to an applied magnetic field so as to induce magnetization of the target-probe complex' and then 'scanning in a raster-scan motion with a magnetic sensor a magnetic signal of said target-probe complex induced by said applied magnetic field so as to identify any of the presence, location, orientation and quantity of the target-probe complex...' (boldface added). Neither Rohr or any other of the prior art of reference teaches or suggests, inter alia, the use of a raster scan motion between the same and the magnetic sensor, particularly as may permit determination of the orientation and the quantity of a target-probe complex.

Applicant has added independent 125 specifying 'subjecting a substantially planar sample of said target-probe complex to an applied saturation magnetic field in the plane of sample the so as to induce saturation magnetization of the target-probe complex'. Not only does not Rohr nor any other of the prior art of reference either teach or suggest any application of such a (1) saturation magnetic field (2) in the plane of the sample to (3) a substantially planar sample, the method of Rohr, in particular, will not work to produce anything, let alone

Serial No.: 09/641,667
Page 9

Applicant's claimed results, under these conditions.

Applicant has added independent 129 specifying 'measuring and characterizing with a magnetic sensor a magnetic field of said target-probe complex'. (Boldface added). Neither Rohr nor any other of the art of reference either teaches or suggest directly (1) sensing, with a (2) magnetic sensor, the magnetic field of an actual target.

Applicant has added independent 133 specifying 'measuring and characterizing with a magnetic sensor a magnetic field of said target-probe complex', as above, 'while forcibly moving the target probe complex relative to the applied magnetic field'. (Boldface added) Neither Rohr nor any other of the art of reference either teaches or suggest directly (1) sensing, with a (2) magnetic sensor, the magnetic field of an actual target while forcibly moving the target.

4. Summary

The present amendment and remarks have overcome and discussed each of the bases for the rejections presented in the Office Action. No new subject matter has been introduced by the present amendment.

In consideration of the preceding amendment and accompanying remarks, the present application is deemed in condition for allowance. The timely action of the Examiner to that end is earnestly solicited.

Serial No.: 09/641,667
Page 10

Applicant's undersigned attorney is at the Examiner's disposal should the Examiner wish to discuss any matter which might expedite prosecution of this case.

Sincerely yours,

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[] Filed Under 37 CFR §1.34(a)

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April 25, 2005
Date

William C. Fuess

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